

Insect Activity is a Beneficial Natural Disturbance Event in the Forest, yet the USFS Spends our Tax dollars to Eliminate these Events. Why? Lumber with Insect Damage has a Lower Value. Clearly, pleasing the Natural Resource Extraction Corporations with Greater Profit is more Important than Managing the Resources so they Function Properly.

“These are both natural disturbances, fire and beetle outbreaks,” says Turner. “It’s not surprising the ecosystem has these mechanisms to be resilient. What we as people see as catastrophes are not always catastrophes to the ecosystem.”

<https://news.wisc.edu/mountain-pine-beetles-get-a-bad-rap-for-wildfires-study-says/>

Insect “Damage” Opposing View - “There is now substantial field-based evidence showing that beetle outbreaks do not contribute to severe fires nor do outbreak areas burn more severely when a fire does occur. Outbreaks are primarily the result of a warming climate that has allowed more beetles to survive and to have multiple broods within a breeding season. In terms of the effects of thinning and logging on beetle outbreaks, the studies show mixed effects on reducing tree mortality before outbreaks at the stand level, no effect during outbreaks of landscape scales, and substantial

DO MOUNTAIN PINE BEETLE OUTBREAKS INCREASE THE RISK OF HIGH-SEVERITY FIRES IN WESTERN FORESTS? 2015

<http://forestlegacies.org/images/projects/fire-insectwhitepaper-dellasala.pdf>

Insect “Damage” Opposing View - “Forests change. Disturbance including insects and fires are frequently part of the regenerative process. Rarely is it possible or desirable to maintain a forest at some seemingly idyllic stage of succession. Forest health - including services provided such as water - require managing to maintain natural processes. In the overgrown western U.S., fires and insects are resetting the system in response to years of fire suppression and changing climate. They are doing so in a way that will lead to adaptive and renewed forests, with far improved outcomes than logging could ever hope to achieve. Bush's "Forest Health" initiative will only exacerbate the negative situation. These forests are still extensive and large enough that letting them be is the best forest health prescription.”

http://ecointernet.org/2004/01/29/insect_attacks_may_benefit_col/

Insect “Damage” Opposing View - “Mountain pine beetles, Ips beetle species, red turpentine beetles, and other wood boring beetles are all naturally occurring insects on the Black Hills, yet the USFS perceives these insects as a threat to the Forest ecosystem. These insect species do diminish the cash value of some conifers. Accordingly, concerted efforts have been made to rid public forests of what are called “pest insects”. *However, such a strategy is not wise or feasible.*

Insects including those mentioned above are integral components of healthy forest ecosystems. These native species do less damage to the forest than the commercial logging program (which completely removes trees and nutrients from the ecosystem).

Black, Scott Hoffman Ph.D., Entomologist/Ecologist and Executive Director The Xerces Society
Excerpt from a 2008 comment letter to Alice Allen Hell Canyon Ranger District, Black Hills
National Forest
http://www.xerces.org/wp-content/uploads/2008/09/black_hills_comments.pdf

Some foresters believe the solution to the problem is increased logging. A review of over three hundred papers on the subject reveals that there is little or no evidence to support this assumption. There is an urgent need for federal and state agencies and land managers to reevaluate their current strategy for managing forest insects—which often relies on intensive logging—and to adopt a perspective that manages for forest ecosystem integrity.”

Black, Scott Hoffman Ph.D., Entomologist/Ecologist and Executive Director, The Xerces Society for Invertebrate Conservation
<http://www.xerces.org/guidelines-logging-to-control-insects/>

Insect “Damage” Opposing View - “These forests may look different to us, but beetle-affected forests are still functioning ecosystems that provide food and shelter for

Insect “Damage” Opposing View “On the basis of this review, we conclude that:”

“The mountain pine beetle and other bark beetles are native species and natural and important agents of renewal and succession in interior forests. Beetle outbreaks create diversity in forest structure, tree ages and species composition at stand and landscape scales, which are important for forest ecosystem health, diversity, and productivity. Beetle-killed trees provide ecological services and functions well beyond their death. At the landscape scale, beetle infestations create a mosaic of forest patches of various ages, densities, species composition and successional stages.”

“The current outbreak in central BC is a socio-economic challenge, rather than an ecological crisis. Mountain pine beetle outbreaks, like fire, are a natural disturbance to which interior forests are adapted and with which these forests have evolved for millennia.”

“Management interventions have never before controlled a large outbreak.”

“Sanitation and salvage clearcutting differ from natural disturbances in their effect on forest structure, and tend to reduce stand and landscape diversity. Natural disturbances vary in their intensity, frequency and magnitude, and amount and type of forest structure they retain. A large-scale clearcut is a stand replacement event that differs from a natural disturbance, especially in its intensity (percent of woody structures removed), frequency over time, and magnitude. Structural diversity at both the stand and landscape level is important for maintaining biodiversity and for the ability of ecosystems to resist and recover from fires, diseases, and other disturbances. Reducing stand and landscape diversity through harvesting may increase the susceptibility of these forests to large mountain pine beetle outbreaks in the future.”

“Current mountain pine beetle management fails to adequately ensure that ecological values are protected. The current legal framework allows ‘emergency’ exemptions from block-size requirements, terrain stability assessments, adjacency constraints and public review periods for operational plans. ‘Emergency’ logging may also occur in Old Growth Management Areas, Wildlife Habitat Areas, riparian reserves, Wildlife Tree Patches, Forest Ecosystem Networks, ungulate winter ranges, thus affecting the implementation of higher level planning, e.g., Land and Resource Management Plans.”

Salvaging Solutions: Science-based management of BC's pine beetle outbreak

Drever, Ronnie Ph.D. and Josie Hughes 2001 “

A report commissioned by the David Suzuki Foundation, 2001

Forest Watch of British Columbia (a project of the Sierra Legal Defence Fund),

and Canadian Parks and Wilderness Society – B.C. Chapter

The link to the source document no longer works

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Insect “Damage” Opposing View “Before discussing the above points in more detail, it is important to specify what the term health as applied to a forest ecosystem means to

Testimony at a Senate Field Hearing on Forest Health, August 29, 1994
Perry, David A. Ph. D.
http://www.subtleenergies.com/ormus/Fire/D_PERRY.htm

It's becoming clear that major insect attacks are a powerful tool to shape the very species and structure of forests into one that's appropriate for the terrain and climate - and one that's sustainable.

Defoliating and sap-sucking insects affect nutrient turnover. Wood boring insects penetrate bark and provide access for decomposers and water, accelerating decomposition. Outbreaks can open holes in the forest canopy. The surviving trees get a nutrient burst to improve their growth and health.

<http://oregonstate.edu/ua/ncs/archives/1997/may/insect-epidemics-natural-path-forest-health>

Insect “Damage” Opposing View “Native insects and diseases play an essential ecological role in Canada’s forests.

By consuming trees and other plant material, forest insects and micro-organisms contribute to healthy change and regeneration in forest ecosystems. They help renew forests by removing old or otherwise susceptible trees, recycling nutrients and providing new habitat and food for wildlife.”

Forest pest management

A publication of Natural Resources Canada

<http://www.nrcan.gc.ca/home>

Insect “Damage” Opposing View - “Although it may be relatively easy to ascertain whether an individual tree is healthy or not, the concept of “forest health” is very ambiguous. The presence of unhealthy trees does not necessarily imply that the forest as a whole is unhealthy. On the contrary, standing dead trees and fallen logs (coarse wood) play important roles in wildlife habitat, soil development, and nutrient cycling, and are a defining characteristic of old-growth forests. Bark beetle outbreaks rarely kill all of the trees in a stand, because they preferentially attack the larger trees and generally ignore the smaller trees. These smaller trees may be hidden by the red needles of the large killed trees during the peak of the outbreak, such that one often has an impression of total tree mortality. However, once those needles fall it usually becomes apparent that many small and moderate sized trees survived the outbreak. These smaller trees may grow two to four times more rapidly after the outbreak than they did before, because they are no longer competing with the big trees for light, water, and nutrients (Romme et al. 1986). In mixed forests of lodgepole pine and aspen, the aspen may grow more vigorously after beetles kill the dominant pine trees. Even when all of the trees are killed, as in a severe forest fire, the result usually is stand regeneration, as described above for lodgepole pine. Thus, from a purely ecological standpoint, dead and dying trees do not necessarily represent poor “forest health.” They may instead reflect a natural process of forest renewal.” (pg.11)

Recent Forest Insect Outbreaks and Fire Risk in Colorado Forests: A Brief Synthesis of Relevant Research”

Romme, W.H., J. Clement, J. Hicke, D. Kulakowski Ph.D. L.H. MacDonald, T.L. Schoennagel Ph.D., and T.T. Veblen. 2006

https://www.colorado.edu/geography/class_homepages/geog_5161_ttv_s09/RommeEtAl_Insects&FireRisk_CFRI_06.pdf

Insect “Damage” Opposing View “Beyond that, these insect attacks are actually nature's mechanism to help restore forest health on a long-term basis and in many cases should be allowed to run their course, according to Oregon State University scientists in a new study published this week in the journal *Conservation Biology in Practice*.

Native insects work to thin trees, control crowding, reduce stress and lessen competition for water and nutrients, the researchers found. Some levels of insect herbivory, or plant-eating, may even be good for trees and forests, and in the long run produce as much or more tree growth.

‘There is now evidence that in many cases forests are more healthy after an insect outbreak,’ said Tim Schowalter, an OSU professor of entomology. ‘The traditional view still is that forest insects are destructive, but we need a revolution in this way of thinking. The fact is we will never resolve our problems with catastrophic fires or insect epidemics until we restore forest health, and in this battle insects may well be our ally, not our enemy.’ ”

View of forest insects changing from pests to partners

Bio-Medicine.org, 2001

<http://news.bio-medicine.org/biology-news-2/View-of-forest-insects-changing-from-pests-to-partners-8940-1/>

Science Blog

<http://www.scienceblog.com/community/older/2001/C/200113890.html>

Insect “Damage” Opposing View “Pine beetle suppression projects often fail because the basic underlying cause for the population outbreak has not changed (DeMars and Roettgering 1982). Typically, if a habitat favorable to high populations of western pine beetle persists, suppression—by whatever means—will probably fail. In summary, once bark beetles reach epidemic levels and cause extensive tree mortality, treatments aimed at reducing densities of the beetles are futile (Wood et al. 1985).

Logging can also lead to heightened insect activity. Soil and roots can be compacted following logging, leading to greater water stress. Soil damage resulting from logging with heavy equipment can increase the susceptibility of future forests to insects and disease (Hagle and Schmitz 1993, Hughes and Drever 2001). Salvage logging after insect outbreaks also can make matters worse by removing snags, parasites, and

Influence of Pre-Fire Tree Mortality on Fire Severity in Conifer Forests of the San Bernardino Mountains, California

http://www.biologicaldiversity.org/publications/papers/Bond_et_al.pdf

“The researchers used satellite imagery to map lodgepole stands attacked by mountain pine beetles, a type of bark beetle, then hiked into the areas to confirm the beetle damage and measure fuel loads. Then they ran computer models to predict fire behavior.”

<http://articles.latimes.com/2010/sep/26/nation/la-na-beetle-fire-20100926>

Insect “Damage” Opposing View “The primary driver of fire is not beetle kill. It’s climate,” said Barry Noon, a wildlife ecology professor at [Colorado State University](#) and an author of the report. “It’s drought and temperature.”

The report warns against using tax dollars to fund widespread forest-thinning efforts, particularly in roadless areas that have been off-limits to logging.

Instead, the authors encourage efforts to be focused around the edges of communities.

“We’re certainly not arguing against cutting down some of these trees, but we think that the cutting effort needs to be focused around communities and homes,” Noon said. “It makes little sense to have wide-scale cutting of these trees.” “

Logging Won’t Halt Beetles, Fire, Report Says

Frey, David

NewWest Travel and Outdoors, 3/03/10

http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/

Insect “Damage” Opposing View “Although the scale of the recent beetle outbreak is unprecedented in modern times, experts note that insect outbreaks and fires are a natural part of Western forest ecosystems. As such, the report found no causal link between insect outbreaks and the incidence of wildfire.

Moreover, the authors found that tree cutting “is not likely to control ongoing bark beetle outbreaks,” nor will it be “likely to alleviate future large-scale epidemics.”

“Despite nearly 100 years of active forest management to control the mountain pine beetle, there is very little evidence to suggest that logging is effective, especially once a large-scale insect infestation has started,” Black said. Black noted that even logging dead trees could make things worse from an ecological standpoint, since their removal eliminates habitat for parasites and insect predators. Logging can also seriously damage soil and roots, leading to greater stress on remaining trees and increasing their susceptibility to outbreaks.”

Battling beetles may not reduce fire risks

Gable, Eryn

Published by the Xerces Society, March 4, 2010

<http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/>

Insect “Damage” Opposing View- “Although ongoing outbreaks understandably have led to widespread public concern about increased fire risk, the best available science indicates that outbreaks of mountain pine beetle and spruce beetle do not lead to an

increased risk of fire in the vast majority of forests that are currently being affected. We should not let the effects of bark beetle outbreaks, as spectacular as they may be, distract us from the real risk. The real concern is that we have built homes, communities, ski resorts, and other infrastructure in inherently flammable ecosystems. The ongoing outbreaks have not increased the risk of wildfire as much as they have drawn attention to the risk that has been there long before the outbreaks began. Forests of lodgepole pine and spruce-fir are prone to high-severity fires during drought conditions, regardless of the influence of bark beetle outbreaks.” (Pg. 5)

Testimony before the Subcommittee on Public Lands and Forests of the Energy and Natural Resources Committee of the United States Senate, April 21, 2010

Kulakowski, Dominik Ph.D., Assistant Professor, Clark University

Link to the source document no longer works

Insect “Damage” Opposing View - “The mountain pine beetle is a native insect, having co-evolved as an important ecological component of western pine forests. The inter-relationship between beetle-caused mortality and subsequent fire has resulted in a basic ecological cycle for many western forests (Schmidt 1988).

Some pines species, such as lodgepole pine, are maintained by periodic disturbances. The lodgepole pine forest-type1 typically is an essential monoculture of even-aged trees that were initiated by a catastrophic, stand-replacing fire. Without the influence of fire (Fig. 1B), lodgepole pine would be lost over much of its native range (Brown 1975, Lotan et al. 1985). Fire serves to prepare the seedbed, releases seeds from the serotinous cones (triggered to release seeds by heat of a fire), and eliminates more shade-tolerant species such as spruce or fir that would eventually out-compete and replace the early seral lodgepole pine.”

Ghost Forests, Global Warming and the Mountain Pine Beetle (Coleoptera: Scolytidae)

Logan, Jesse A. Ph.D. and James A. Powell Ph.D.

Published on the *AMERICAN ENTOMOLOGIST* • Fall 2001

<http://www.math.usu.edu/powell/phenol/feature-logan.pdf>

Insect “Damage” Opposing View- “The sheer number of diverse opinions about how the mountain pine beetle epidemic will ultimately impact Wyoming's ecosystem suggests that there's no single strategy the state should employ in its forests at this time. There are simply too many unknowns, so scientists, conservationists and state

officials are better off adopting a "wait and see" attitude than taking action now they might regret in the future."

"But it's clear that Wyoming would be best served if all parties view the beetle epidemic as a scientific issue and not a political one. Political solutions can be expedient, but in hindsight often prove to be costly mistakes."

"Some observers worry that the dead trees will create a significantly higher fire danger. Others suggest that the fire danger has been exaggerated. A study of lodgepole pines in the greater Yellowstone region, for example, concluded that beetles actually reduce the risk of wildfires by thinning tree crowns. Some experts note that wildfires are just as likely to erupt in green, healthy forests as they are in beetle-killed forests."

"But what should be done with the trees killed by beetles? Logging is one potential answer. The U.S. Forest Service, using a \$40 million grant to clear beetle-killed trees, recently announced plans to cut about 14,000 acres of trees near communities and in more than 350 recreation sites in Wyoming and Colorado. Skeptical environmental groups, however, argue forestry officials are simply using the beetle epidemic as an excuse to do more logging on protected land."

"Wyoming can't afford to let those fears result in wasting millions of state and federal dollars fighting the epidemic and letting industry rush to chop down dead trees. Wyoming's best chance to make wise, informed decisions is to follow the science, and be willing to be nimble as data and test results change."

Science should lead pine beetle epidemic solutions

Star-Tribune Editorial Board

Wyoming Star Tribune, October 3, 2010

http://trib.com/news/opinion/editorial/article_f87d7db9-ed2a-5620-8d66-20556935c592.html

Insect "Damage" Opposing View - "The idea that beetle damaged trees increase fire risks seems a logical assumption -- dead trees appear dry and flammable, whereas green foliage looks more moist and less likely to catch fire. But do pine beetles really increase the risk of fire in lodgepole pine forest? University of Wisconsin forest ecologists Monica Turner and Phil Townsend, in collaboration with Renkin, are studying the connection in the forests near Yellowstone National Park. Their work -- and their surprising preliminary results -- are the subject of [the NASA video](#)."

Link to the video: http://svs.gsfc.nasa.gov/vis/a010000/a010600/a010634/G2009-098_Wildfire_and_Beetles_ipod_lg.m4v

“The results may seem at first counterintuitive, but make sense when considered more carefully. First, while green needles on trees appear to be more lush and harder to burn, they contain high levels very flammable volatile oils. When the needles die, those flammable oils begin to break down. As a result, depending on the weather conditions, dead needles may not be more likely to catch and sustain a fire than live needles.”

Landsat Reveal Surprising Connection Between Beetle Attacks, Wildfire

Posted at the NASA WEB site, Sep. 8, 2010

[illegible]

(1) Our findings suggest that mountain pine beetle infestation in lodgepole pine does not increase the subsequent risk of active crown fire, and that fire does not necessarily cause an epidemic of mountain pine beetle in nearby lodgepole pine.” (Pg. 37)

“(3) Even within high-severity bark beetle infestations, all lodgepole pine trees were not killed. These forests generally remain well stocked, with density of young trees sufficient to replace individuals lost during the current epidemic.” (Pg. 38)

“(5) Our findings support the need for forest managers to take a long-term and broad-scale view of timber and disturbance dynamics.” (Pg. 38)

“(6) Because climate drivers are so important for both fire and insect disturbances, forest managers may be very limited in their ability to change or stop these disturbances.” (Pg. 39)

Tinker, Daniel B. Ph.D. et al.

http://landscape.zoology.wisc.edu/October%202009%20updates/JFSP_FnlRep_30Sept2009.pdf

http://helenair.com/news/opinion/article_f3d671f0-37c9-11df-921d-001cc4c002e0.html

Insect “Damage” Opposing View - “For instance, insects and disease organisms help decompose and recycle nutrients, build soil, maintain a diversity of tree and other plants, as well as generate snags (standing dead trees) and down logs needed by many different species of fish and wildlife. In fact, many species of wildlife depend upon insects and disease organisms to create habitat or provide food. The winners per se in the current mountain pine beetle epidemic are species such as the brilliantly colored western tanager, mountain bluebird, olive-sided flycatcher, nuthatches, chickadees, and woodpeckers. All of these bird species benefit from actually feeding on the adult beetle or their larvae, as well as the increased amount of dead trees available for the excavation of summer nest holes, and warm winter roosts. The olive-sided flycatcher is particularly dependent on open areas of recent forest disturbance that have several snags from which they can perch to locate and capture flying insects.”

<http://www.garna.org/beetle/part2.html>

Insect “Damage” Opposing View “The bark beetle can play an important regulatory role in forest ecosystems. Normally, these insects attack old or weakened trees, speeding development of a younger forest. But their role in increasing fire activity is largely unfounded. It could be assumed that all the trees beetles are killing would provide more than ample fuel for a fire. This is only true immediately after the tree dies, while it still has its needles, or after the tree has fallen down. "Outbreaks of mountain pine beetle...do not appear to substantially increase the risk of subsequent fire under most conditions. Instead, fire risk is strongly tied to warm and dry conditions, such as those of recent decades. As long as the severe droughts we have been seeing in recent years persist, we can expect a high risk of fire - regardless of beetle outbreaks. (Black and Noon 2013)" “

By Logan Jackson and Andrew Hettick

https://serc.carleton.edu/NZFires/megafires/bark_beetles.html

Insect “Damage” Opposing View “Natural disturbances such as forest fires, insect and disease outbreaks, drought, wind throw and floods have occurred in Canada’s forests for thousands of years. Disturbance is part of the natural life cycle of the forest and most often helps the forest to renew itself.

Disturbances are particularly important to the cycle of regeneration and regrowth in boreal forests. Fires, as well as insect and disease outbreaks, often occur on a large scale there, more so than in Canada's temperate forests. Here are some of the ways that these natural disturbances work to renew boreal forests."

Published by *Natural Resources Canada*, May, 2016

<http://www.nrcan.gc.ca/forests/fire-insects-disturbances/forest-need/13081>

Insect “Damage” Opposing View “Various insects are able to colonise weak but still living trees and kill them through their feeding. Well known examples of this are certain

species of bark beetles. In this process old, weak or ill trees or trees under stress are eliminated. At the same time however this benefits the overall health and resistance of the forest. Cadavers and excrement from forest animals are also colonised and disposed of by specialized insects such as blow and flesh flies or carrion beetles.”

By Beat Wermelinger and Peter Duelli

Published by Waldwissen.net, April, 2017

https://www.waldwissen.net/wald/tiere/insekten_wirbellose/wsl_insekten_oekosystem_wald/index_EN